NOVEMBER/DECEMBER 2025

23UFCS14/23UFSC14 — PROBLEM SOLVING TECHNIQUE

Shanmuga Industries Arts & Science College
T.V.Malai

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is machine language?
2. Give one example each of input and output devices.
3. What is meant by structured programming?
4. Draw the symbol of a decision in a flowchart.
5. Write the syntax of a simple if statement.
6. Define repetition structure.
7. What is meant by array initialization?
8. What is meant by string termination character?
9. List any two symbols used in a DFD.
10. State one benefit of recursion over iterations.

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Explain in detail the working principles of translators.

Or

(b) Differentiate between primary memory and secondary storage devices.

12. (a) Explain different data types with examples.

Or

(b) Explain different types of programming errors with examples.

13. (a) Explain multi-way selection structures with an example.

Or

(b) Write the role of loop control variable in repetition structures.

14. (a) Explain numeric and character-based data with examples.

Or

(b) Write pseudocode to store and print 5 student marks using a ID array.

15. (a) Write pseudocode for a recursive function to calculate factorial of a number.

Or

(b) Explain the basic concepts of files with suitable examples.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain the different types of computers.

17. What is flow-chart? Explain the advantages and disadvantages of flowcharts with an example.

18. Write an algorithm, pseudocode, and flowchart to calculate the sum of digits of a number using loops.

19. Discuss 1Dim and 2Dim arrays with syntax and examples.

20. Explain in detail Data Flow Diagrams with suitable examples.

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